LOCKSMITH
WG-4804-08

OPERATIONS
WORKCENTER

I. POSITION AND ORGANIZATION INFORMATION

Position:

Locksmith, WG-4804-08

Purpose of position:

The primary purpose of this job is to repair, test, install, and perform minor modifications to locking devices, including combination locks. The work includes the manufacture and duplication of keys and the keying and combinating of locking mechanisms.

Organization:

Mainenance Branch

Organization goals:

II. MAJOR DUTIES

A. Duty (Critical):

Plans and lays out work from blueprints, sketches, specifications, and work orders. Reviews work order requirements to determine the work sequence, selection and use of trade tools and equipment, and type and extent of necessary repairs. Interprets and applies available technical manuals, manufacturer diagrams and specifications. Makes changes to job layout based on on-site inspection of job. Determines the time frame for completing repairs.
(16%)

Tasks:

1. Reads appropriate guidelines, manufacturer drawings, diagrams, and technical manuals to determine project requirements.

2. Plans sequence of work by determining work to be done, materials required, and proper tools
for the project.

Selected Staffing KSAs:

A1, A2, A3, A4

B. Duty (Critical):

Performs minor modifications to key and combination locks, latches, safes, and vaults when the security of existing locks have been compromised, e.g., when keys have been lost, too many keys exist for any given lock, or when locks can be opened by other than the specifically grooved key or the exact combination pattern. Combination changes are also performed when there is a change in personnel responsible for security, as required by security regulations, rooms are remodeled, and doors are reversed or new openings are made. Reads and interprets manufacturer drawings and diagrams necessary for minor modifications. Manipulates combination locks when combinations have been lost, feels combination or determines the correct spot at which to drill hole

until tumblers can be seen, the combination discovered, or the lock reached and removed by screwdrivers. When keys have been lost opens lock by picking, using standard or improvised tools inserted in the lock core to align the tumblers in the same manner as the key would, permitting the lock to open. Accomplishes minor modifications such as changing complete locking mechanism; changing combination locks by removing the locking mechanisms, establishing new settings, and reinstalling lock mechanisms; replacing cylinders and gears; adding, subtracting, or
shortening pin tumblers.

(16%)

Tasks:

1. Modifications are made in a timely manner to prevent security violations.

2. Completes modifications to locks, lock assemblies, and keys.

3. Calibrates locking mechanisms and keys.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

C. Duty (Critical):

Performs full repair cycle of locating trouble, disassembling, repairing, cleaning, reassembling, and reinstalling a wide variety of makes and models of locking devices, as well as locking bolts. Performs operational tests to determine the extent and location of malfunctions. Troubleshoots locking devices typically connected to locking bolts within the container, or other combination locks activated by timing mechanisms. Determines thorough operational tests on which of the components are malfunctioning in the case of lockouts caused by defective parts. Determines precise locations and angles for drilling and/or burning without harming the contents or causing irrevocable damage to the locking mechanisms or the containers. Applies knowledge of a variety of metals in order to select the drill bits or torches to be used in neutralizing the lockouts. Determines the number of wheel tumblers, locates and plots contact point readings on graphs, and determines true centers using a developed sense of "feel" and hearing aids such as stethoscopes to amplify sounds within the lock case. Repairs, replaces, or fabricates defective parts by soldering or brazing broken locking parts together, reshaping or fabricating parts. May also machine parts such as locking bolts and special sized screws using bench lathes and drill presses. May inform personnel in other trades or shops, i.e., welders or painters upon lock repair, the need for their services to restore containers to their original condition or perform the work to be done. Cannibalizes non-serviceable locks to secure salvageable parts for future use. (20%)

Tasks:

1. Plans techniques to be used and applies judgment in the selection of tools and accepted trade practices to troubleshoot and neutralize lockouts.

2. Interprets and applies technical manuals, manufacturers diagrams, and specifications while repairing and testing the locking mechanisms.

3. Locates the problem, and makes all necessary repairs/maintenance in a timely manner.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

D. Duty (Critical):

Makes new keys from duplications, impressions, and key codes from a variety of key blanks. When a pattern is available, places pattern inside key cutting machine and traces new key according to pattern. When key codes are available, uses key combination in duplicating keys. When neither pattern nor key code is available, removes cylinder and measures the length of pins and tumblers and manufactures new key by these dimensions or by the impression method, inserting blank key in lock, obtaining impression from the pins, making file cuts and encodes by applying key gauge to the cuts made. If no blanks are available, uses duplicating machine with milling attachments to cut broaches or shoulders to tolerance. May be required to establish and maintain master key coding system. (16%)

Tasks:

1. Measures depths of cuts and pin sizes.

2. Fits keys to locks by changing tumbler pins, setting, and length of pins to open locks.

3. Determines the most effective procedure to follow in each individual case.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

E. Duty (Critical):

Uses and maintains tools. Maintains bench stock levels of parts, materials, tools, and equipment at prescribed levels. Utilizes hand tools such as small files, chisels, hammers, picks, tweezers, screw drills, punches, and grips. Uses tools and equivalents such as key duplicating machine, jeweler's lathe, bench grinder, combination grinder and buffer, electric drills, acetylene torches, soldering irons and brazing torches, bench lathes, and drill presses to do the work.

(16%)

Tasks:

1. Uses, maintains, and accounts for all types of hand and/or power tools required to accomplish assigned duties.

2. Prepares accurate, complete, and up-to-date records of actions taken.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

F. Duty (Critical):

Utilizes safety and security practices and procedures following established rules and regulations and maintains a safe, clean, and secure work environment. Performs clean-up duties, such as cleaning equipment, sweeping, straightening, and lining up tools and other property in the assigned area. (16%)

Tasks:

1. Operates equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence.

2. Adheres to safety and security procedures and regulations and promptly reports any observed or identified violations in accordance with established guidelines.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

III. KNOWLEDGES, SKILLS AND ABILITIES (KSAs)

A. Selected Staffing KSAs:

1. Knowledge of the internal structure and operating characteristics to repair and maintain a variety of standard mechanical and combination-type locking devices.
2. Knowledge and ability to select tools and technical diagrams and manuals, determine work sequence, and read and use manufacturer parts catalogs and assembly instructions to obtain replacement parts and make repairs.
3. Knowledge of various types of woods and metals to select appropriate tools and equipment, and familiarity with various key blanks to duplicate or make new keys.
4. Knowledge of safety regulations, practices, and procedures.
5. Skill in keying and rekeying locks and installation of locking devices.
6. Skill in use of small hand tools, as well as the adjustment and use of power tools common to the trade.
7. Ability to perform visual and operational checks; and dexterity and coordination between hands and eyes to remove broken keys from keyways and open standard locks.

B. Basic Training Competencies:

1. Knowledge of the internal structure and operating characteristics to repair and maintain a variety of standard mechanical and combination-type locking devices.
2. Knowledge and ability to select tools and technical diagrams and manuals, determine work sequence, and read and use manufacturer parts catalogs and assembly instructions to obtain replacement parts and make repairs.
3. Knowledge of various types of woods and metals to select appropriate tools and equipment, and familiarity with various key blanks to duplicate or make new keys.

4. Knowledge of safety regulations, practices, and procedures.
5. Skill in keying and rekeying locks and installation of locking devices.

6. Skill in use of small hand tools, as well as the adjustment and use of power tools common to the trade.
7. Ability to perform visual and operational checks; and dexterity and coordination between hands and eyes to remove broken keys from keyways and open standard locks.

IV. CLASSIFICATION FACTORS

Factor 1. Knowledge

1. -- Knowledge of the internal structure and operating characteristics of a wide range of makes, models, and types of common mechanical locking mechanisms and of their working interrelationships.

-- Knowledge of a variety of metals to select the drill bits or torches to be used in neutralizing the lockouts.

-- Knowledge of master key systems to set up coding systems involving varying types of locks and keyways.

-- Skill to determine precise locations and angles for drilling and/or burning without harming the contents or causing irrevocable damage to the locking mechanisms or the containers based on knowledge of points of least resistance of the lock mechanisms and/or containers.

-- Skill in the manipulation of combination locks as well as picking key locks by determining number of wheel tumblers, locating and plotting contact point readings on graphs, and determining true centers using a developed sense of "feel" and hearing aids such as stethoscopes to amplify sounds within the lock case.

-- Skill in soldering or brazing broken locking parts together, reshaping parts by grinding and filing, fabricating parts when they are not available in stock, such as fences, dial posts, rings, spacers, and spline keys by sawing, filing and grinding stock metal.

-- Skill in the adjustment, maintenance, and use of standard hand tools such as files, picks, tweezers, tension wrenches, as well as powered tools common to the trade, such as key duplicating and coding machines, grinders and buffers, stamping machines, electric drills, acetylene torches, soldering irons and brazing torches, bench lathes, and drill presses

-- Ability to apply sound judgment in the selection of commonly used neutralization techniques.

-- Ability to independently interpret and apply technical manuals, manufacturers diagrams and specifications while repairing and testing the locking mechanisms.

Factor 2. Responsibility

Employee receives assignments from the supervisor, either orally or through general work orders indicating location, person to contact for further information, and priorities. Work is typically performed on-site. The locksmith uses sound judgment in independently selecting work processes, techniques, and tools and equipment; determining work sequence and type and extent of necessary repairs. Responsible for planning, setting up, and maintaining master key systems and assuring that no interchanges occur. May also be responsible for providing technical assistance to lower graded workers and for coordinating their work with others. Completed work is not reviewed for adherence to accepted trade practices but rather for effectiveness of meeting schedules and customer needs.

Factor 3. Physical Effort

Work seldom requires lifting or carrying of items weighing in excess of 15 lbs. Frequently stands, stoops, bends, kneels, and works in awkward positions when installing and opening locks and emergency exit hardware on-site. May be required to lift security containers weighing up to 50 lbs and heavier weights with assistance.

Factor 4. Working Conditions

Work is normally done inside in areas that are well lighted, heated, and ventilated. Occasionally work is done outside in bad weather or in areas that are drafty and poorly lighted. Possibility of exposure to cuts, scrapes, and bruises. Exposed to the possibility of burns while using acetylene torches, bracing torches, and soldering irons.

V. CLASSIFICATION SUMMARY

In this position:

Duty A. 16% WG-4804-08 Locksmith
Plans and Lays Out Work

Duty B. 16% WG-4804-08 Locksmith
Performs Modifications

Duty C. 20% WG-4804-08 Locksmith
Performs Repair

Duty D. 16% WG-4804-08 Locksmith
Makes New Keys

Duty E. 16% WG-4804-08 Locksmith
Uses and Maintains Tools

Duty F. 16% WG-4804-08 Locksmith
Practices Safety

OPM FWS Job Grading Standard for Locksmith, WG-4804 dated December 1996, HRCD-2.

Grade: WG-08